

STORIES

IN AGRICULTURE AND LIFE SCIENCES VOL.5 NO.2, 2011

RECIPE FOR SUCCESS

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the Food System

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and Taste!

STORIES

IN AGRICULTURE AND LIFE SCIENCES

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STORIESRecipes

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College of Agriculture and Life Sciences



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FOREWORD

EVERYONE EATS.

Eating is one of the great, shared experiences that tie us
all together.

You can't ask for a favorite recipe without hearing a
story. You'll hear about Nana as well as her sugar cook-
ies. You'll laugh at the retelling of a mother-in-law's reac-
tion to a meal. You'll cry as someone shares the only dish
their father could stomach during chemotherapy. You'll
hear about huge life events tied to food—weddings,
funerals and everything in-between.

Food, both eating it and talking about it, is a conduit
for connecting to others. So is growing it.

This issue highlights some of the work the college is doing in research, educa-
tion and extension linked to food—growing it, eating it and understanding it.
Please don't look at this issue as the main course on food production work at
Iowa State—we'd need volumes, not just one issue. Rather, enjoy this sampling
featuring a variety of successful people and programs. We've turned the pen over
to a few such people in our "Voices" section on page 16 to share their perspec-
tives on food production.

We asked many of those featured to share their favorite recipes as part of our
interviews for this issue. Look for the titles in the cards alongside each story and
go online (www.ag.iastate.edu/stories) for complete recipes.

I'm including my Grandma Reicks' apple kuchen recipe. It's
perfect for "coffee time," the break my dad enjoyed after chores
each morning. It's not too sweet, but avoid dunking unless you
don't mind crumbs in your coffee.

We had three apple trees on our farm growing up, "one for
eating and two for baking," as my mother said. We peeled, cored
and cut bushels of apples each fall. We also collected those that
had fallen, making use of them for applesauce.

My husband and I recently moved to an acreage with apple
trees. My oldest son, who devours apples daily, was thrilled. It was nearly impos-
sible for him to wait for those apples to ripen. Our two-year-old picked several of
the low hanging fruits early, but a few apples higher up managed to make it the
full season. Those apples made one delicious kuchen.

Kind regards,

Melea Reicks Licht



Photo: Bob Elbert

Apple Kuchen

From the kitchen of: **Melea Reicks Licht**

► Find this recipe and many more
online at www.ag.iastate.edu/stories

ON THE COVER

Nora Engstrom takes a break during the
Horticulture Farm Home Garden Field Day
to sample veggies and zucchini bread. She
and her parents, **Fred** ('99 agronomy, MS
'08) and **Tracie** ('98 psychology) and her
brothers **Frank** and **Miles** plan to plant more
berries in their garden based on what they
learned at the event. See story on page 26.



Of the many diverse ways to define agriculture, I think I like Jim Borel's definition the best: "the optimistic science." (See page 16.) Maybe it's because I'm an optimist by nature. Great challenges confront us, locally and globally. I'm confident we'll continue to make progress toward solutions through science, education and extension and outreach in agriculture and life sciences.

I believe optimism shines through our new college strategic plan, which we finalized this fall. Here are a few excerpts:

We embrace our critical role in addressing challenges in food security, food safety, climate change, environmental stewardship, renewable energy and human health. We must produce civic-minded, globally oriented graduates who are well-prepared to address society's challenges as leaders. We will enable students to explore diverse career paths available through agriculture and life sciences. We will help broaden students' perspectives through exposure to diverse people, ideas and cultures. We must ensure students understand both the fundamentals of their chosen discipline and the importance of interdisciplinary work. We will ensure students are engaged with global issues.

We must inspire faculty and staff to work together, guided by mission, to enhance quality of life in Iowa and for the world. We must manage resources wisely and collaborate strategically to provide the infrastructure and the opportunities for faculty to achieve at the highest level of their abilities.

Our research, extension and educational programs will promote economic growth and job creation. We must help faculty, staff and students succeed in transforming innovations into entrepreneurial activities. We will excel at transdisciplinary programs. We must tell our story, in the voices of faculty, staff and students, to promote our successes. Our extension and outreach must engage alumni, friends, stakeholders and partners. Working together, we will enhance the vitality and sustainability of Iowa communities and the well-being of Iowans.

You can find the complete two-page document at the "About the College" link on our homepage. Our plan is all about building on momentum. We see it growing daily in rising enrollment, extraordinary student success, placement rates, world-class accomplishments of faculty teachers and scientists and the steadfast support of alumni and friends. We are the optimistic science, with good reason.



Wendy Wintersteen

Endowed Dean of Agriculture and Life Sciences



STORIES Recipes

Butternut Squash and Apple Bisque

From the kitchen of: **Wendy Wintersteen**

► Find this recipe and many more online at www.ag.iastate.edu/stories

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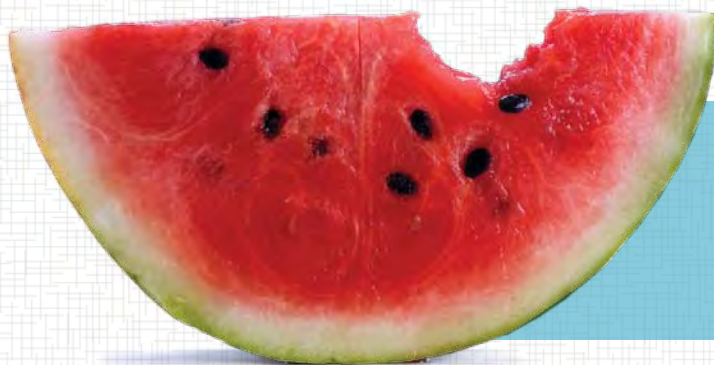
BY THE NUMBERS

SPONSORED FUNDING

No matter how you count it the College of Agriculture and Life Sciences is number one on campus in securing sponsored funding.

- Single-counted grantsmanship: \$40.5 million in fiscal year 2011
- Double-counted grantsmanship: \$160 million in both research and nonresearch awards in fiscal year 2011

In the 2010-2011 school year, Iowa State University dining services purchased almost **\$1 million in Iowa-produced food.**



COLLEGE NEARS RECORD ENROLLMENT

3,584 undergrads

4,211 total enrollment

Enrollment **up 8%** from 2010

Record enrollment in online learning with **900+**
48% of current students are women

TOP 10 MAJORS WITH HIGHEST ENROLLMENTS

- 1 Animal Science
- 2 Agricultural Business
- 3 Animal Ecology
- 4 Agricultural Studies
- 5 Agronomy
- 6 Biology
- 7 Industrial Technology
- 8 Agricultural Systems Technology
- 9 Horticulture
- 10 Agricultural and Life Sciences Education

Watermelon developed by Charles Hall, emeritus professor and former head of horticulture from 1974-1990, continues to bring in more royalties per year than any other technology patented by College of Agriculture and Life Sciences faculty. University-wide, Hall's "IA-1" watermelon variety ranks tenth in annual income generation.



The Chieftain apple, developed at Iowa State University, is one of the top 10 commercially grown varieties in Iowa.

IN U.S. FOOD PRODUCTION IOWA RANKS:

- #1** in Pork
- #1** in Soybeans
- #1** in Corn
- #1** in Eggs
- #4** in Beef
- #8** in Dairy Products (#4 in Ice Cream)
- #9** in Turkey
- #10** in Lamb
- Iowa commodity organizations

COOL TOOLS

Learn more about food production, from the producer and consumer sides, with these resources from the Leopold Center for Sustainable Agriculture. Visit STORIES online for links at www.ag.iastate.edu/stories.

- Iowa Fruit and Vegetable Market Planner—calculate demand for 80 different crops in and around Iowa
- U.S. Food Market Estimator—shows approximate demand for 204 food products for every county in the United States
- Produce Profitability Calculator—compare horticultural crops and profitability
- Learning About Local—directory of 85 Iowa entities that support local foods efforts
- Marketmaker—maps businesses and markets in Iowa, offers resources for Iowa and 16 other states

Iowa State is home to the process, developed in 1937, that produces the world's finest blue cheese—**Maytag Blue Cheese**.

Thanks to research and outreach by Iowa State, Iowa-grown, **Muscadine melon** yields have increased 400% over the past 75 years.



Lester Wilson, professor of food science, has won numerous awards recognizing his fun and entertaining teaching methods.

KETCHUP or SALSA?

By Barbara McBreen

or

SALSA?

Photo: Bob Elbert

FUN-FOOD TRIVIA ENTERTAINS AND TEACHES

Do Americans consume more ketchup or salsa in one year?

Lester Wilson knows the answer.

Wilson, a University Professor in food science and human nutrition, has a buffet of tidbits about the science of food. It's the type of fun-food trivia Wilson shares with students in his introductory food science classes.

"Who would have thought, from the condiment standpoint, that more salsa is sold in the United States each year than ketchup?" Wilson asks.

Using humor in the classroom, Wilson says, helps loosen up students. His methods work. He has won numerous awards for teaching and advising. In 2009, he received the State of Iowa Regents Award for Faculty Excellence and this September he received the university's James Huntington Ellis Award for Excellence in Undergraduate Introductory Teaching.

"I try to get students to become good consumers and understand why it's important to understand the labels and how it all relates to marketing," Wilson says.

If you attend any food science student event, you'll find him surrounded by stu-

dents. It's evident he enjoys what he's doing—and that's the advice he gives students.

"I tell students to find something they enjoy and they won't find a better job," Wilson says.

Wilson, who grew up in Portland, originally planned to go into forestry. A chemistry teacher stirred his interest in food and mentors helped him focus on the science of food. After earning his Ph.D. from the University of California, Davis, Wilson came to Iowa State because of its emphasis on teaching and student advising.

He attends every commencement because he enjoys seeing students off at graduation. After graduation, students often contact him to tell him how useful his classes were in preparing them for a career in the food industry.

"When they come back and say I made them successful, I tell them, 'No you made yourself successful, I just helped along the way and gave you some tools,'" Wilson says. "I like to help them develop their critical thinking skills, because in the food industry they have to make tough decisions every day."

Wilson says the popularity of food science is evident in the current trends such as fair trade, gluten free and green products. Food scientists also research ways to reduce obesity, offer nutritious diets, low sodium foods and provide consumers with gourmet dining experiences at home.

"As long as people eat, there will be jobs for food scientists," Wilson says.

From food safety to flavor chemistry to product development to thermal process evaluation, Wilson covers a wide variety of food-related research. One project involves NASA and the development of foods for missions to the Moon and Mars. Much of Wilson's research is focused on soy, so much so that one of his peers posted Dr. Tofu on his office door. ☞

STORIES Recipes

Seasonal Stir Fry

From the kitchen of: **Lester Wilson**

► Find this recipe and many more online at www.ag.iastate.edu/stories

FINDING VALUE IN HEALTHFUL GENETIC MODIFICATIONS

By Ed Adcock

Wallace Huffman studies what drives consumers' decisions on food purchases.

A recently published study by the ISU economist found that when given a choice, informed consumers are willing to pay more for genetically modified food that offers health benefits. But the type of modification made a difference.

He and his colleagues randomly selected groups of consumers, provided them with information about the experimental foods and asked them to register their preferences by placing bids for all presented foods.

Participants offered to pay more, compared to plain produce, for produce with increased nutrients from intragenic modification, which uses genes from the same plant species. They weren't willing to pay more for produce enhanced by transgenic modification, which takes genes from other species.

"When genes for enhancing the amount of antioxidants and vitamin C in fresh produce—broccoli, potatoes and tomatoes—were transferred by intragenic methods, consumers are willing to pay on average 25 percent more than for a plain product. That is a sizable increase," says Huffman, Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences.

Before making their decisions the participants were given information on different perspectives about genetic modification. It included positive, negative and neutral perspectives each organized under headings of general information and scientific, human, financial and environmental impacts.

The positive information on the food was given from the point of view of the

food industry. The negative information was presented from the perspective of environmental groups. Neutral information was given from the scientific community. The industry and neutral perspectives contained definitions of intragenic and transgenic modifications.

Huffman says information from the food industry was usually given more weight by consumers than the information presented by environmental groups. The neutral information moderated the negative effect of environmental group information.

This study contrasts with a consumers' willingness to pay study Huffman conducted on transgenic foods in 2001. At that time, consumers discounted transgenic food designed for pest control by 15 percent on average relative to plain-labeled product.

"Participants were so excited about these healthful consumer traits rather than the farmer traits we had tested 10 years ago," Huffman says. "People were looking forward to these type of products hitting the market."

Among other current research, Huffman is starting a study of the willingness of consumers to purchase potatoes with reduced acrylamides, a potential carcinogen that is produced when starchy foods are cooked at high temperatures.

While Huffman is doing more food-

related research recently, he has a number of economic interests in teaching and research.

The Iowa native and Iowa State alum ('66 farm operations) with a doctorate in economics from the University of Chicago, is co-author of a popular book, *Science for Agriculture*, which is described as "the first thorough quantitative and analytical treatment of the history of the U.S. agricultural research system."

Huffman joined the faculty at Iowa State in 1974, hired to work in the area of the economics of human capital in agriculture. He teaches a human capital time allocation course, an undergraduate labor economics class and econometrics research methods. **S**

Photo: Bob Elbert



Economist Wallace Huffman studies consumers' willingness to pay for genetically modified food carrying traits designed to benefit farmers and consumers.

EXAMINING ENZYMES FOR PRIME CUTS

By Ed Adcock

Someday you may be able to tell if a piece of meat is going to be tender just by a quick litmus test, thanks to Elisabeth Huff-Lonergan and the meat science team at Iowa State.

Tenderness depends on many factors, including the animal's genetics, how it was raised and processed and the cooking method.

She and colleagues are looking at enzymes present in the live animals that are responsible for regulating protein turnover, muscle growth and efficiency of muscle growth. Those same enzymes are responsible for tenderization and the breakdown of muscle fiber after the animal is harvested.

What happens to the animal during harvesting can influence cell-signaling pathways that affect some of these enzymes. "The ultimate goal is to discover some interventions we can make, maybe at the time of harvest, that can influence some of these pathways and give us the quality we want," she says.

For example, a graduate student she works with is trying to identify chemicals in the purge, or juice that seeps from raw meat, for tenderness indicators.

"That's a really cool place to look if you want to identify something quick, like a dipstick test," she says. "You could get a preview of its tenderness and process it accordingly—if tender, steaks; if not, hamburger."

Huff-Lonergan earned master's and doctorate degrees at Iowa State. She married her graduate student office mate, Steven Lonergan, and worked with him

when they were both assistant professors in meat science in the Animal and Dairy Science Department at Auburn University before returning to Iowa State in 1998.

"We work pretty closely on a lot of projects. Most of my work focuses on the enzyme calpain. A lot of his work is focused on calpastatin, the inhibitor to that enzyme. So that's a nice combination," she says.

Having both on the faculty is a boost for the department's meat science team, which has a tradition of being one of the best in the country, says department chair Maynard Hogberg.

"In addition to being an outstanding scientist, Elisabeth is emerging as a leader in the department and in her profession," he says.

Huff-Lonergan helped coordinate a much-needed peer review of teaching that was implemented in the department last fall, Hogberg says. And she serves as the department's representative to the ISU ADVANCE program, which seeks to increase the participation of women in academic science and engineering careers.

On the research front, she and Steven Lonergan are part of an international swine efficiency project led by Iowa State animal scientist John Patience (see story on page 28). Their labs are working to identify if selection for increased feed efficiency affects pork quality and if so, how. They also are investigating how increased feed efficiency influences muscle growth in pigs. **S**



Photo: Bob Elbert

Elisabeth Huff-Lonergan studies enzymes present in live animals that are responsible for tenderization in meat.

STORIES Recipes

*Rack of Lamb with
Blueberry/Shiraz Sauce*

From the kitchen of: **Elisabeth Huff-Lonergan**

*Sweet and Tangy Coleslaw
w/ Orange and Fennel*

From the kitchen of: **Elisabeth Huff-Lonergan**



Photo: Bob Elbert

CRUNCHING THE NUMBERS FOR BETTER FOOD POLICY

By Sandra Clarke

Decisions, decisions. With limited resources—whether tax dollars or corporate margins—how do you get the biggest bang or greatest good for the buck?

Helen Jensen, a professor of economics, has spent much of her 26-year career at Iowa State University using the quantitative tools of economics to help make those decisions better informed in the areas of agriculture, food and human nutrition.

Jensen has led the food and nutrition policy division of the Center for Agricultural and Rural Development since 1985, mentoring many students and young researchers along the way.

In the area of food safety and quality, Jensen was among the first to evaluate the economic rationale and implications of food safety regulations for meat.

“I have often looked at questions such as how much would it cost a firm or industry to change the way it produces a food, making it safer,” she says. “However, the interesting extensions are how do we design

policies and regulations that encourage firms to produce safer foods?”

Lately she’s focusing on food safety in fresh produce, including before harvest. In August she walked the fields of a large lettuce grower in California, marveling at the many acres, and the company’s strict measures to prevent contamination in that living ecosystem.

“I was struck by the challenge growers face,” she says, “trying to turn a field growing fresh lettuce and greens into a unit that produces a safe product, protecting the field from rodents, birds and four-legged animals.”

New handling, processing and testing techniques help safeguard food. But will consumers pay for the highest levels of protection?

Consumer choice in the marketplace plays an important role in Jensen’s research. Lack of income can seriously constrain the choices of lower-income consumers. Higher-income consumers are faced with their own choice dilemmas: buy local, buy

organic, eat in or eat out? Jensen analyzes many consumption choices in the research she publishes.

Jensen’s research often extends science to the policy-making process. Her committee work on the review and redesign of the U.S. Department of Agriculture’s food programs to incorporate new scientific evidence on nutrition and diets is a perfect example. For the Women, Infants and Children program, it was the first major revision in its 40-year history.

“The new rules had several important changes, but one that has been most cited is introducing a voucher to be used to purchase fruits and vegetables,” she says.

That revision, along with similar ones for the national school lunch and breakfast programs, could potentially boost the nutrition of many individuals living in low-income households.

“Economics cannot solve all problems,” says Jensen, “but it can be used to identify effective interventions or changes and ways to improve incomes and improve health.”

ENJOYING THE CHANGE OF SEASONS

By Melea Reicks Licht

EMERITUS EXTENSION FOOD SCIENTIST REFLECTS ON EVOLUTION OF THE INDUSTRY

Bill LaGrange always considered that his work as an Extension food scientist was, at its core, about helping people do their jobs to their utmost ability.

"I loved working with people in processing plants, regulatory agencies and scientific organizations related to the food industry. Plus, those flavor evaluations at 10 a.m. at Sara Lee's plant in New Hampton was icing on the cake," he says with a smile.

For four decades LaGrange offered extension programs to help with food safety, regulatory requirements, quality testing methods, product packaging and facility management.

"I worked with everyone from the food plant executives to the folks cleaning the floors," he says.

LaGrange ('53 dairy industry, PhD '59 food microbiology) helped the Iowa food processing industry change, as consolidation became the norm and the number of facilities in Iowa decreased. The remaining plants increased in processing capacity and product volume.

As the industry changed, so did his department. The Department of Dairy Industry became the Department of Dairy and Food Industry, then Food Technology, and finally the Department of Food Science and Human Nutrition, which it remains today.

"In addition to dairy facilities my clientele included large plants manufacturing foods like BBQ sauce, cookies and potato chips," he says.

LaGrange was involved with the Institute of Food Technologists, of which he was named fellow; the Iowa State Dairy Association; The International Association for Food Protection; and the FFA. He also worked as a consultant in Brazil, Ireland and Australia.

Iowa State campus had always been familiar to LaGrange. He grew up accompanying his father and namesake to the Iowa State livestock farms. The eldest

LaGrange was a professor of animal husbandry at Iowa State College.

LaGrange says he considered following in his father's footsteps but thought majoring in dairy industry was a better fit since he had "no real farm experience other than hoeing and detassling corn."

Today at 80, he runs four miles three times a week and plays tennis as often. He is an accomplished stained glass artist. LaGrange also is an active member of several Ames community organizations including Rotary, Ames Historical Society, Ames Trees Forever, the Ames Foundation and the Ames Public Arts Commission. 📷

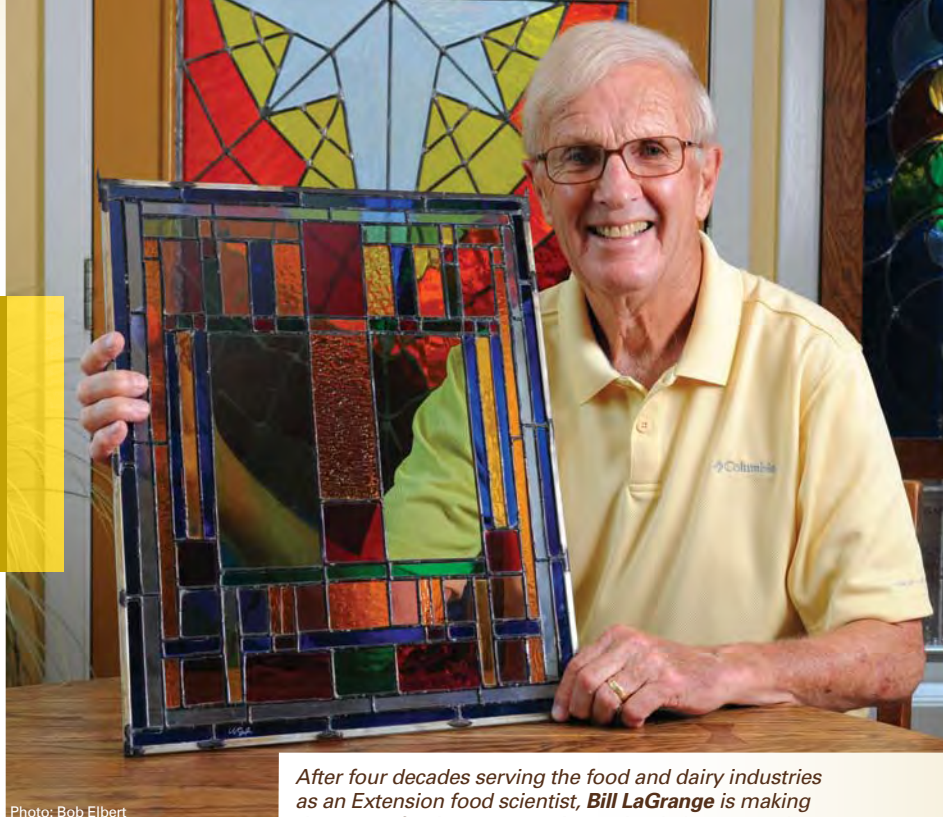


Photo: Bob Elbert

*After four decades serving the food and dairy industries as an Extension food scientist, **Bill LaGrange** is making the most of retirement creating stained glass art and volunteering in several community organizations.*



Photo: University Archives

Gene Sanders (left) and Bill LaGrange work in dairy chemistry in 1957.

ONLINE EXTRAS: www.ag.iastate.edu/stories

LaGrange shared his Iowa State experiences as part of the college's 150th anniversary and his experiences at working at Moore's Dairy in Ames in 1950. Read his essays online.

STORIES Recipes

Variations on Orange Sherbet

From the kitchen of: **Bill LaGrange**

► Find this recipe and many more online at www.ag.iastate.edu/stories



PAULSEN RECEIVES TEACHING AWARD

Thomas Paulsen, assistant professor of agricultural education and studies, was honored for his commitment to, and excellence in, college teaching and the scholarship of teaching and learning by the North American Colleges and Teachers of Agriculture at the association's annual conference in June.

FACULTY SERVE ON NATIONAL SCIENCE COMMITTEES

ROTHSCHILD NAMED JEFFERSON SCIENCE FELLOW

Max Rothschild, distinguished professor in animal science, has been selected for a Jefferson Science Fellowship with the U.S. Department of State. Each fellow spends one year at the Department of State or the U.S. Agency for International Development for an on-site assignment in Washington, D.C.

BABCOCK NAMED TO FOOD, AG POLICY RESEARCH COMMITTEE

Bruce Babcock, Cargill Endowed Chair in Energy Economics, director of the ISU Biobased Industry Center and professor of economics, has been named a member of

the research committee of AGree, a new initiative to transform food and agricultural policy. AGree was created by eight foundations to meet pressing challenges in food and agriculture policy by working across the academic and political spectrum.

XIN REAPPOINTED TO USDA AIR QUALITY TASK FORCE

Hongwei Xin, professor of agricultural and biosystems engineering and director of the Egg Industry Center, has been reappointed to a two-year term on USDA's Agricultural Air Quality Task Force. Xin's research and extension programs have focused extensively on air quality in animal feed operations.

HEARTY HELLOS

Chris Mondak has been named ANR Extension assistant director. Prior to starting this position on July 6, Mondak served as the ISU Extension dairy specialist in northwest Iowa, a position she held since 2000.

Cathy Kling has been named interim director of the Center for Agricultural and Rural Development. Kling, an economics professor, was division head of the Center's Resource and Environmental Policy Division.

Sue Blodgett has been named chair of the departments of entomology and of natural resource ecology and management, effective Sept. 19. Blodgett was formerly head of the plant science department at South Dakota State University.

Steve Mickelson, inaugural recipient of the Charles R. and Jane F. Olsen Professorship in Engineering, has been named chair of the agricultural and biosystems engineering department. He was formerly associate chair of the department, director of the Center for Excellence in Learning and Teaching and co-director of Learning Communities.

FOND FAREWELLS

Lloyd Anderson ('57 animal science, '61 PhD animal reproduction), distinguished professor in animal science, retired in June after nearly 50 years at Iowa State University.

Steven Jungst ('69 forestry, '76 MS, '78 PhD), professor, interim chair of natural resource ecology and management and interim chair of entomology, retired in June. He was a member of the forestry faculty at Iowa State since 1974.

Gerald Miller ('71 MS soil science, '74 PhD), interim vice president for extension and outreach, retired in June. He has been at Iowa State University for almost 40 years as a professor in agronomy and an extension agronomist, and most recently as an associate dean for the College of Agriculture and Life Sciences.

Patricia Murphy, university professor in food science and human nutrition, retired in June after approximately 30 years at Iowa State University.

FOR FLORIDA FIRST GRADERS—CORN IS COOL!

"Dear Mr. Lamkey—Thank you for taking the time from your job to make our day! We learned a lot from your letter and the book you sent us. Corn is cool! The t-shirts are awesome! It was so nice of you to give them to us. Some of us even want to be agronomists when we grow up! Maybe some of us might choose to go to college at Iowa State!"—First grade students in Kristi Hibbs Giuffreda's class at Riverglades Elementary School in Parkland, Fla.

The students wrote a note to Iowa State asking about corn they were growing in their garden that had developed an ear in the tassel. Agronomy department chair **Kendall Lamkey** responded with answers and "I'm an Agronomist" gifts.



Contributed Photo



Lauren Mitchell, a senior in dietetics, researched and presented information about fast food. She believes listing calories beside menu items would help consumers make informed choices.

FOOD FOR THOUGHT

DIETETICS STUDENT EXAMINES FAST FOOD TRADE-OFF By Barbara McBreen

Informed consumers make healthier choices eating in or dining out.

Understanding the nutritional content of food is important, says Lauren Mitchell, a senior in dietetics. She summarized current research as part of her “Fast Food Findings” presentation in a food science and human nutrition communications class.

Mitchell found that about half of fast food restaurants provide customers with nutritional information, but not on the menu. She found that customers don’t look at the nutritional information if it’s not on the menu.

In fact, the studies she reviewed showed that only six people out of 4,311 actually

read the information posted on walls or the counter before ordering. Her solution—post the calorie content beside each menu item.

“I think people will still eat out even if the calories are posted, but they may choose smaller serving sizes,” Mitchell says.

The articles she reviewed indicated that most families choose fast food because it’s convenient, inexpensive and they like the taste of the food. She also found that 25 percent of Americans eat out every day and spent 49 percent of their food budget outside the home in 2006.

The key to eating nutritional meals, Mitchell says, is planning. If you do eat out, she suggests choosing healthier options, smaller portions and reading the nutritional information. Although she eats fast food on occasion, she prefers to cook her meals. She believes there’s a general misconception in today’s culture that it’s difficult to cook.

“If you can read a recipe, you can cook,” Mitchell says.

She attributes her love for food to her large family and nine years of cooking and exhibiting food projects through 4-H. She’s also a proponent of taking time to eat three meals a day.

“Eating is more than nourishing your body,” Mitchell says. “When people talk about their favorite memories, most of those are tied to food.”

Since she transferred from Iowa Central Community College she’s visited a Meredith test kitchen and volunteered at the Food and Wine Expo in Des Moines. She also became one of the first peer mentors in the food science and human nutrition department’s transfer student learning community.

This year, Mitchell is excited to work as a teaching assistant for the Pasta Pasta Cooking Workshop. She’s also been involved in Collegiate 4-H, the Student Dietetic Association and the culinary science club.

Mitchell says she’s undecided about her plans after she completes her internship next year. She has an interest in serving as a community-based dietician, which means she would be working to change eating behaviors at the community level or helping people understand the nutritional information on labels and in restaurants. **S**

STORIES **Recipes**

Italian Cream Cake

From the kitchen of: **Lauren Mitchell**

► Find this recipe and many more online at www.ag.iastate.edu/stories

AT THE HELM:

LEADING COMES NATURALLY FOR PRESIDENT OF THE GOVERNMENT OF THE STUDENT BODY

By Barbara McBreen

Dakota Hoben is a recognized leader on campus. And it's not just because he was elected president of the Government of the Student Body. With four majors, the senior in agricultural business, international agriculture, economics and political science says he seeks out leadership opportunities to serve others.

"If you want to see things change for the better you need to be involved and be in a position of influence," Hoben says. "In any leadership position it's about giving back and as GSB president it's about working for the students."

The GSB position was something he pursued after a two-year stint as a GSB senator. He's lightened his student load this year to meet those duties and engage his fellow students. His campaign goals include improving access to funds for student organizations, establishing financial literacy programs and improving dead week policies to reflect the purpose of the week, which is to prepare for final exams.

Getting involved and taking charge is something Hoben learned in high school and through his 4-H and FFA activities. His school was fairly small, which meant students could be involved in several activities.

Hoben says sometimes leading involves being in the right place at the right time. In 2007 he received the Governor's Meritorious Life Saving Award along with 11 other Grandview high school students for their quick response after a tornado hit their hometown. As soon as it passed the boys began checking homes to see if any-

one needed help. They found a 91-year-old woman who was trapped and was rescued by Hoben and four other boys.

"We happened to be where we were needed," he says.

That sense of caring and service to others has continued throughout his college career. Hoben served on the search committee to select a new Iowa State University president and was one of 12 students nationwide to be selected for the International Collegiate Agricultural Leadership Program to study international trade and marketing in Panama and Columbia. He also is an active ambassador for the college helping recruit high school students. Hoben served as the alumni chair and says he enjoyed networking and interacting with alums.

Other leadership opportunities have taken him around the world. Hoben worked as a summer intern in 2010 at the Iowa Agribusiness Export Partnership in Des Moines. He helped plan and lead a group of agricultural entrepreneurs to China to explore business opportunities.

"You hear about the growing middle class market in China and businesses think they can go to China and start making money," Hoben says. "But that's not the case. The businesses making money now were there 20 years ago. It takes a long time to grow a business in China."


As far as the future, there are no limits for Hoben. He's especially interested in international agriculture and helping the industry navigate through global change. 

Photo: Bob Elbert



Dakota Hoben is comfortable behind a podium. President of the Government of the Student Body is just one of many leadership positions he's held during his college career.

STORIES Recipes

Brownies

From the kitchen of: **Dakota Hoben**

► Find this recipe and many more online at www.ag.iastate.edu/stories

STORIES **Recipes***Rice Milk Cakes*From the kitchen of: **Himali Samaraweera**► Find this recipe and many more online at www.ag.iastate.edu/stories

Himali Samaraweera is studying protein in egg yolk for use in supplements improving iron and calcium absorption and adding value to eggs.

CRACKING THE POTENTIAL OF EGGS

By Barbara McBreen

Breaking egg protein molecules into smaller structures isn't as simple as separating the yolk from the whites.

Himali Samaraweera, a doctoral student in meat science, is studying the characteristics of phosphopeptides, smaller segments of protein, which are taken from the phosvitin, a main protein in egg yolk.

"I'm researching methods to break down phosvitin to produce phosphopeptides for use as supplements, nutraceuticals and antioxidants materials," Samaraweera says.

The goal of the research is to add value to protein separated from eggs. Dong Ahn, Iowa State University animal science professor, is overseeing the research. His group developed methods to separate the phosvitin from eggs on a larger scale for industrial use.

Since Iowa is the top producer of eggs in the United States, Ahn says finding ways to separate and breakdown phosvitin could

add value to eggs and benefit producers. Phosvitin costs \$1 a milligram and there are 200 milligrams in an egg.

"If we can find ways to break phosvitin down to small pieces using organic agents we would increase the value of eggs," Ahn says.

A phosvitin molecule is difficult to separate without using solvents or chemicals, which can't be used in products used for human consumption. Samaraweera is testing and analyzing methods to crack the phosvitin structure using organic materials with some pre-treatments.

"I'm using six different enzymes to break the protein down into small peptides for various functions," Samaraweera says.

One function would be to use those elements as binding agents in iron and calcium supplements.

"This supplementing agent would allow

90 percent of the iron and calcium absorption in humans as opposed to the 10 to 20 percent that we see now," Ahn says.

Samaraweera came to Iowa State from Sri Lanka in 2008 after hearing about the meat science department's excellent reputation. Professors at the University of Peradeniya, where she will join the faculty after she graduates next year, also recommended it.

Along with research and lab work, Samaraweera currently works as a teacher's assistant in two labs and has moderated meat science short courses. She says she enjoys overseeing the labs and looks forward to teaching after she graduates.

She's also been involved in club activities, serving as treasurer for the meat science club and helping with club fundraisers. Samaraweera also is a member of the Sri Lanka Association and helped bring Buddhist monks to Ames as guest lecturers. ■

UNEARTHING ADVENTURES

By Barbara McBreen

LANDSLIDE DOESN'T DETOUR LOOKER'S GLOBAL RESEARCH

Nate Looker was on his way to his research station in the cloud forest above Guatemala City when the rainy season arrived early. The excess rains washed away the road forcing the VW pickup carrying Looker and two fellow researchers toward a ravine of mud. Fortunately they saved themselves and the vehicle, but the only road to his data station was left impassable.

Undeterred, Looker, a senior in global resource systems, returned to Guatemala City to remap his research strategy.

Last spring Looker spent the semester studying the ecohydrology of Guatemala. He can talk for hours about the discoveries he made during his internship experience. Along with a rich understanding of the culture and ecosystems, he unearthed a few adventures.

Looker came to Guatemala to measure the water intake of tree species in two different ecosystems in the Sierra de las Minas mountain range. The range stretches 100 miles along southeastern Guatemala and supplies water to 10 percent of the country.

The native Iowan found the mountainous ecosystems fascinating. The mountain ridges support an elfin forest of windblown vegetation averaging three feet tall. The cloud forest, a contradiction in terms, forms just below the mountain ridge. Covered by fog most of the time, the water-rich ecosystem has little sunlight creating stunted vegetation and epiphytic growth, which means many plants, like moss, grow on top of other plants.

"The cloud forest ecosystem, which is rare to begin with, is particularly vulnerable to changes in climate and land use," Looker says. "It's important to understand how

these changes impact ecosystem services, such as water output."

The lower elevations support a pine and oak forest, which is where Looker moved his sensors after losing access to the cloud forest. He built 32 sap-flow sensors to monitor the water intake in trees. The research is part of a World Wildlife Foundation project that is monitoring hydrological patterns throughout Mesoamerica.

"The sensor is a device you stab into a tree. It establishes a heat pulse to measure changes in sap flux," Looker says. "The idea is to understand how water use relates to species and climatic conditions."

This year Looker was the first Iowa State student to be named both a Udall Scholar and a Goldwater Scholar. The Udall Foundation awards scholarships to students who study environmental and American Indian issues and show promise of making significant contributions through scientific advances, service or community action. Goldwater is the nation's premier undergraduate scholarship in mathematics, natural sciences and engineering.

Despite setbacks and a shortage of materials for the sensors, Looker described his internship as an awesome experience. He plans to pursue a doctorate in landscape ecology and a career doing research for a university or an international research institution.

He says he's mesmerized by the forests and pointed out that Guatemala means "the place of trees." For Looker this adventure included a glimpse of what those trees, ecosystems and mountains mean to Guatemala. 📍



Nate Looker, a Udall and Goldwater Scholar, spent a semester studying ecohydrology in a cloud forest in Guatemala. The senior in global resource systems plans to pursue a career in ecology research.

STORIES Recipes

Indian Rice Pudding

From the kitchen of: **Nate Looker**

► Find this recipe and many more online at www.ag.iastate.edu/stories

SOY YOU THINK YOU CAN COOK

The Soyfoods Council, in cooperation with ISU Dining and the food science and human nutrition department, created a challenge for students to creatively cook with soy. In the “Soy You Think You Can Cook” competition, the judges were looking for unique applications of soy products within the dishes prepared. First place went to the Soy Sistas team, consisting of **Amanda Pudlik**, **Elise Fiscus** and **Cassie Miller**, all seniors in culinary science. Their recipes were a sweet and savory Monte Cristo sandwich that included soy cheese, soy cream cheese and vanilla soy milk, and a creamy winter squash and apple soup that included soy milk and soft tofu. Visit www.ag.iastate.edu/stories for recipes.



Contributed Photo

AGRONOMY STUDENT CHOSEN AS NATIONAL FFA STAR FINALIST

The National FFA Organization has selected **Vivian Bernau**, a senior in agronomy, as a finalist for the American Star in Agriscience award. These awards recognize students who have developed outstanding agricultural skill and competency through their career development programs, demonstrated outstanding management skills, earned the American FFA Degree and met other agricultural education, scholarship and leadership requirements.



Contributed Photo

STUDENT SELECTED FOR NATIONAL COLLEGIATE AG AMBASSADOR TEAM

Brittany Jurgemeyer, a junior in public service and administration in agriculture, was selected as a member of the National Collegiate Ag Ambassador team that is comprised of 20 college students from across the United States. The ambassadors will work to help their communities better understand the value and importance of agriculture and how it is a part of their daily lives. Audiences will range from elementary students to adult community and civic groups. Topics include food safety, biotechnology, sustainability, advocacy and pollination.

AG BUSINESS CLUB NAMED OUTSTANDING NATIONAL CHAPTER SIX YEARS RUNNING

The Iowa State University Agricultural Business Club has been named the National Outstanding Chapter by the Agricultural and Applied Economics Association (AAEA) for the sixth consecutive year. The Agricultural Business Club is an undergraduate student organization advised by economics professors **Ronald Deiter** and **William Edwards**. Since 1992, the club has received the National Outstanding Chapter Award 10 times and has been awarded the National Creative Club Award six times since the award was created in 2000.

**WHAT MAKES
OUR GRADS
SO SPECIAL
AS NEW HIRES?**

There's a reason our placement rate for new graduates is **over 98 percent**. The College of Agriculture and Life Sciences's undergraduate **experience** is rich in academic **rigor**, practical **knowledge**, global **awareness** and internships. Together, it makes our students especially **qualified** for today's demanding agriculture and life sciences industry. Find out how our grads are **the right fit** for your company or organization.

RECIPE FOR SUCCESS

STORIES Recipes

The ingredients are all here:

Science and technology. The drive to discover. A passion for improving lives. It creates the perfect recipe for success in improving and better understanding food, food production and food systems. Faculty and staff in the College of Agriculture and Life Sciences cook up that and more through their research, teaching and extension efforts. Look for recipe cards to see some of their own favorite food choices and go online for the complete recipes.

STORIES

Rack B

From the

► Find this
online at

Photos: Bob Elbert



Contributed Photo

James Borel is the executive vice president of DuPont and a member of the company's Office of the Chief Executive. He oversees DuPont's production agriculture businesses, DuPont Crop Protection and Pioneer Hi-Bred. Borel ('78 agricultural business) grew up on a farm near Clarion that included hogs, corn and soybeans.

VOICES

By James C. Borel

BIG SOLUTIONS: INNOVATION AND COLLABORATION AT WORK

The world faces a challenge—feeding 9 billion people by 2050 in sustainable ways with limited land and resources. We have made tremendous strides over the last century, but agriculture needs to continue to be more productive—to grow more on each acre of land.

We can meet the global food security challenge, but only if we empower collaboration and enhance the ability of farmers in all parts of the world to be as productive as possible.

One aspect of collaboration involves research universities and seed companies. The important research done in universities can be invaluable in finding new approaches to seed technology and crop production management. One example is a research collaboration that we, at DuPont, began in 2009 with Iowa State. We partnered to develop a new technol-

ogy to more effectively develop biotech traits in plants and improve drought tolerance in corn.

We also work with the International Rice Research Institute in the Philippines that brings together the Institute's rice germplasm pool with DuPont's capabilities in molecular analysis, commercial-scale breeding and field locations for testing hybrids. Partnerships like this could contribute to making available to rice breeders and farmers throughout Asia better advanced breeding lines and better hybrids.

At DuPont, we are a science company that believes in innovation and collaboration. We take seriously the example of the Pioneer Hi-Bred founder, Henry Wallace, who built his company by bringing innovation into the American cornfields. But we know that we cannot invent everything ourselves. So, in addition to signifi-

cant research investments internally, we are also focused on how to encourage innovation more broadly.

New technology can be daunting to some, but Norman Borlaug, agronomist and Nobel Laureate, loved learning about new things. And he knew the formula: better innovation and more collaboration to improve agriculture, to empower farmers, to feed the world.

That was his formula. It is our formula at DuPont.

I think of agriculture as the “optimistic science.” Because together, with innovation and collaboration, we can help do what the world needs us to get done. **S**

STORIES **Recipes**

Confetti Corn

From the kitchen of: **James Borel**

STORIES **Recipes**

Squash-Apple Cheddar Gnat

From the kitchen of: **Jan Libbey**

► Find this recipe and many more online at www.ag.iastate.edu/stories

Jan Libbey ('84 fisheries and wildlife biology), right, is a farmer and co-owner with her husband, **Tim Landgraf**, of *One Step at a Time Gardens* Hancock County. Jan is actively involved in local food development work at state and local levels and is currently coordinating Healthy Harvest of North Iowa, a regional food system working group.

Contributed Photo



VOICES

By Jan Libbey

FOOD AND FARMING: THE CORNERSTONE OF COMMUNITY

“You have your doctor, your lawyer, your hair dresser or barber,” notes Kamyar Enshayan, long time local food champion. “Why not also make sure you have your own farmer?”

For more than 15 years questions about our food, like Kamyar’s, have challenged Iowa to take a hard look at how this state can rebuild our local and regional food production. The conversation that has unfolded is setting deep roots for a new component of Iowa agriculture. In fact the response has been so great, that a state-wide approach, captured in the Iowa Food and Farm Plan, was adopted during the 2011 Iowa Legislative session.

My husband, Tim Landgraf, and I, along with our two children Andrew and Jessica, started our family farm venture in 1994. One Step at a Time Gardens is among many Iowa farms that have grown to meet this new opportunity. Today Tim

and I farm full-time together, marketing products six months of the year off of eight acres. Our farm provides for 130 farm members, farmers market customers and several wholesale accounts. Our products include vegetables and herbs, pastured poultry and raspberries. Over the past 16 years, we’ve been fortunate to host 16 interns, sharing our insights and benefiting from their contributions.

The experience of the flavors and the connection to the land through food and the story of food and farming, provide our members and customers as fresh a relationship as the food itself. This direct connection begins, ever so gradually, to create a powerful shift in our food culture. A new economic relationship emerges, integrating more than just an exchange of product and finances through the commitments shared among farmers, eaters and other community partners.

Community-based agriculture recognizes food as a cornerstone of complex community assets—nutritional, economic, social and environmental.

A simple question about where we get our food has opened exciting opportunities for farmers and eaters all across this state. With engaged farmers, diverse partners and Iowa’s new Food and Farm Plan in place, Iowa is well positioned to leverage the complex role food production plays in our communities. 

ONLINE EXTRAS: www.ag.iastate.edu/stories

Learn more online about the Iowa Local Food and Farm Plan and the Local Food and Farm Initiative bringing together producers, the Iowa Department of Agriculture and Land Stewardship, Iowa State University Extension and ISU’s College of Agriculture and Life Sciences.



Photo: Bob Elbert

Scott Tapper is a pork producer who farms near Webster City. He is a former president of the Iowa Pork Producers Association and 1979 farm operations graduate of Iowa State University.

STORIES **Recipes**

Pork Loin Chili

From the kitchen of: **Scott Tapper**

► Find this recipe and many more online at www.ag.iastate.edu/stories

VOICES

By Scott Tapper

THE FACE OF FOOD PRODUCTION: FAMILIES LIKE OURS

I am proud to produce quality pork for U.S. and foreign consumers. I take great pride in producing a wholesome, safe product that consumers can buy with confidence. I have had the opportunity to see food production systems all over the world and nothing compares to the U.S. From the farm to the supermarket, all partners involved are striving to have the best product available.

Being the fifth generation to live on my farm, I have had the opportunity to improve it and pass it on to my children. Livestock has been a large part of the sustainability of this farm. I raise the corn to feed the pigs that produce the manure to fertilize the corn—and the cycle repeats itself each season. I live here, drink the water and have raised my kids here.

I make sure the animals entrusted in my care are well cared for and comfortable. This not only makes economic sense, but goes to the core of what being a farmer still is. We care about our animals. What else would make me fix a hog waterer on a freezing Christmas Eve, go check pigs one last time at 10 p.m., or miss a family event because the pigs just didn't quite look right today?

I hope my children will have the opportunity to play a role in the ever-changing food production system. We need young people not only to be great employees, but also to take over as entrepreneurs, owning their own businesses and farms. We as producers must reconnect with consumers, who have decreasing ties to agriculture and less under-

standing of where their food comes from. We need to put a face on food production. We must learn to tell our own story or risk losing more of our food production to developing agricultural areas abroad.

I'd like consumers to know that we produce the most abundant and safest food supply in the world with the largest variety. Food production is not just nameless, faceless corporations. It's still families making their living in agriculture, whether it be directly or indirectly—owners, contractors or employees, farm workers, truck drivers or meat cutters. We all provide food with pride and enjoy doing our part to feed the world. **S**



Photo: Kansas State University

VOICES


By Catherine Woteki

THE SCIENCE BEHIND YOUR FOOD

When people think about where their food comes from, many think of the farmer or rancher—and rightly so. But few think of the scientists working behind the scenes to support our agricultural producers, keeping them productive and our food supply safe.

Food, agriculture and natural resource scientists are involved in the biggest challenges facing the world today: ensuring food safety and security, keeping food producers productive amidst a dramatically changing climate, creating the bio-energy sources of the future and improving food quality and availability to encourage healthier diets. Some of the best and brightest minds in America are in labs across the country, rolling up their sleeves to solve these diverse problems.

In fact, agricultural scientists in our land grant universities and USDA labs have a history of finding the answers most urgently needed by society. We have to make sure this dynamic engine for innovation and problem-solving keeps going. That means making sure we continue to attract the best and brightest students to the agriculture, food and natural resource sciences. As Dean of ISU's College of Agriculture and Life Sciences, I saw firsthand the excitement and fulfillment students can gain studying science—and as they progressed through their careers. Now, as USDA's chief scientist, I have the privilege of overseeing the scientific agencies where many of those students will continue their research—and that enthusiasm endures.

In short, I'm happy to keep the flame burning for agricultural, food and natural resource research. It's an exciting field of science, and one that will continue to offer good jobs well into the future. ISU is a key player in this effort, and I look forward to working together to ensure that agriculture continues to fulfill its vital role. 

Catherine Woteki, is the U.S. Department of Agriculture's Chief Scientist and Under Secretary for Research, Education and Economics. Woteki served as dean of the College of Agriculture and Life Sciences at Iowa State University from 2002 to 2005.



Photo: Bob Elbert

FOOD SYSTEMS 101

UNDERSTANDING THE CONTEXT AND COMPLEXITY
OF FOOD SYSTEMS AND SOCIETY By Brian Meyer

Above: **Ruth MacDonald** (left) and **Cheryl Reitmeier** lead a new course in which students think about food, understand context and evaluate the impact of food choices on their health, the environment and society.

STORIES Recipes

Wild Rice Soup

From the kitchen of: **Ruth MacDonald**

► Find this recipe and many more online at www.ag.iastate.edu/stories

A new class challenges students to grasp the complexity of food systems and to better understand food production issues.

The Societal Impact on Food Systems course was offered for the first time last spring. It was taught by Ruth MacDonald, professor and chair of the Department of Food Science and Human Nutrition, and Cheryl Reitmeier, professor and associate chair of food science and human nutrition.

"Everyone makes food choice decisions throughout their lives," says MacDonald. "The goal was to make students think about food, understand context and evaluate the impact of food choices on their health, the environment and society. The course

focused on the broad spectrum of food systems and to try to see it in its entirety to put a framework around discussions."

Last spring's class of 13 undergraduates was a casserole of majors, from animal science, food science, French and English, and diverse personal perspectives, from farm-raised to urban, from meat lovers to vegetarians.

They learned about issues in food safety and links to environment and health; types of food systems; history, trends and components in processing, packaging, transportation and marketing; defining the current U.S. food system; influences of economics, public policy

“There are many factors involved in making decisions on our food choices. They include our resources and time, ethical beliefs and also what our friends and neighbors are saying. In some cases, your decision may be ‘It depends.’”

and politics and food systems; and role of consumers, government, farmers, retailers and other stakeholders.

From day one, students were encouraged to engage in discussion and debate, share experiences and think through their ideas in writing. One exercise was to write a letter to Congress about a current agricultural policy or food safety issue. They surveyed other students on what they knew about agriculture and the food system. They met with a molecular biologist who was on campus to speak about a book on genetically modified foods.

Discussions were stimulating and, at times, passionate about topics such as migrant workers in agriculture and what kinds of food and soft drinks should be allowed in high schools. “There were a lot of eye-opening moments for everyone in the discussions. One of our class expectations was to be respectful and nonjudgmental, allowing everyone to voice ideas and allowing acceptance of opposing viewpoints,” says MacDonald.

The final project was a team presentation on a chosen topic. “The teams had members who had studied the pros and those who had studied the cons, and then

they had to come together and have a consensus. It wasn’t easy,” she says.

But that’s the real world, MacDonald says. “Students learned that as adamant as they can be in making their case, in the end, you need to make a decision. Being dogmatic and saying we must do this or that ignores other perspectives or situations. There are many factors involved in making decisions on our food choices. They include our resources and time, ethical beliefs and also what our friends and neighbors are saying. In some cases, your decision may be ‘It depends.’”

The course will be offered again in the spring of 2012. In the future, the instructors will look into making it available more broadly online.

“I feel everyone would benefit from a course like this,” MacDonald says. “We wanted to put issues in front of students to think through and build on what they’re learning in their other classes. If they begin to have a holistic view on food systems, it may be helpful in navigating the bewildering array of information they’re bombarded with each day and help them put it into context.” ■

What’s in a Name?

Whether consumer or producer driven, terms or labels are a major part of navigating today’s food systems. Part of the Societal Impact on Food Systems course is understanding terminology used to describe food. The following examples were used in the class last spring:

Genetic modification. Changing the genes of an organism by insertion or deletion, usually for some sort of possible benefit to the survival of the organism.

Natural. Products labeled “natural” cannot contain any artificial flavor or flavoring, coloring ingredient, chemical preservative or any other artificial or synthetic ingredient; and the product and its ingredients are not more than minimally processed (ground, for example). All fresh meat qualifies as “natural.” All products claiming to be natural should be accompanied by a brief statement which explains what is meant by the term “natural.” USDA does not regulate use of the term “natural.” (Source: USDA)

Organic. Organic production is a system that is managed in accordance with the Organic Foods Production Act and regulations in the Code of Federal Regulations to respond to site-specific conditions by integrating cultural, biological and mechanical practices that foster cycling of resources, promote ecological balance and conserve biodiversity. The National Organic Program develops, implements and administers national production, handling and labeling standards. (Source: USDA)

Local. Obtaining food from within some set distance of one’s location. Some define as anything that can be transported to the location in one day or less.

Nutraceutical. Created from the words “nutrition” and “pharmaceutical” meaning a food (or a supplement) that may provide medical or health benefits, including the prevention and/or treatment of a disease (Source: American Association of Pharmaceutical Scientists)

Whole food. Loosely defined as a food which has undergone as little processing as possible, or that is in as close to a natural state as possible.

GROWING

By Barbara McBreen

SUCCESSFUL MANAGERS

Wet springs, planting delays and bad weather as well as high yields, good prices and great markets are all part of the business of food production. Dealing with those ups and downs is a challenge Iowa State University students have experienced firsthand since 1943.

Today, that hands-on learning approach has expanded and students can choose between managing a conventional corn and soybean operation or a horticultural enterprise.

Bill Murray, an agriculture economics professor, developed the Agriculture Education and Studies 450 Farm Management and Operation class in 1943. The concept was simple—teach hands-on farm management by putting students in charge of an actual farm.

The concept was backed by the philosophy that the farm had to support itself. Louis Thompson, the farm's instructor in the 1950s, and later an associate dean, emphasized the importance of letting students run the farm without financial support. In a 1983 interview he stated, "If we can't teach farmers to make money, we have no business teaching farm management."

The 450 Farm has grown into a successful program that allows students to make choices, while facing the same challenges other producers juggle. Throughout its 68 years students have raised corn, soybeans, chickens, dairy cows, sheep, beef cattle and hogs. Each class maintains detailed records, daily logs and recommendations for future classes.

"This collaborative approach allows students to use problem-solving, decision-making, critical thinking and communication skills," says Tom Paulsen, assistant professor in agricultural education and studies. "This is a capstone course designed to provide an opportunity to manage a real farm operation."

Jesse Deardorff, a senior, and Chad Krull, a junior, both agricultural studies students volunteered to finish up some business for the 450 Farm after the class ended last spring. The two drove four hours at 30 miles per hour in the sweltering July heat to pick up a soybean harvesting head. They wanted to make sure the next class was ready for

harvest. Both say the class provided practical management experience they couldn't have gotten elsewhere.

"The class gives you an idea of what happens from bottom to top, as far as grain production," Deardorff says. "If you didn't have any idea how the process works, you would have after taking this class. It's also about learning farm management, which is different than farm operations."

During that same heat wave, Kyler Sheets and Joe Jacobs spent a couple of days thinning onion seedlings. The two students were part of the first summer 465 Horticulture Enterprise Management course, which began in the spring of 2011. The new course was based on the same idea as the Ag 450 Farm.

During the spring session students wrote a business plan and decided what to plant, grow and harvest. Members of the summer session, Jacobs and Sheets, worked on implementing the plan.

"This class is modeled after the Ag 450 Farm, but the challenges, especially for marketing and labor, are completely different," says Jacobs, a senior in horticulture.

In July, the students hosted a tour at the All Horticulture Field Day to share what they learned. Attendees listened while Jacobs and Sheets talked about successes and obstacles they encountered planting tomatoes, potatoes, watermelon and onions on the one-acre plot located on the Iowa State Horticulture Station north of Ames.

One recommendation for future classes, "don't plant onion seeds. It's labor intensive and costly," says Jacobs.

Along with onions, the first horticulture 465 class planted tomatoes, potatoes and watermelons. Sheets, a senior in horticulture,



Photo: Barbara McBreen

Joe Jacobs, a senior in horticulture, harvests some of the tomatoes grown by the 465 Horticulture Enterprise Management class. Jacobs plans to start his own vegetable business after he graduates in May.



Jesse Deardorff (left), a senior, and **Chad Krull**, a junior, in agricultural studies, inspect soybean plants at the Ag 450 Farm. The capstone class offers students hands-on experiences in farm management.

Photo: Barbara McBreen

ture, says the class is an opportunity for students to apply what they learned in previous classes.

"I've never farmed before. I've raised a few tomato plants, but not 1,000," Sheets says.

The class is in the business of raising food, says Malcolm Robertson, the instructor and program coordinator with the Leopold Center for Sustainable Agriculture. The idea, he says, is to let students make business decisions and solve problems.

"This course is focused on the direct marketing of local foods, which is essen-

tially relationship marketing and meeting the needs of customers," Robertson says.

The class supplied locally grown food to Iowa State University Dining Services, grocery stores and restaurants, while the Ag 450 farm class decided how to sell commodities that could be used to feed livestock. This fall both classes focused on harvesting, marketing and beginning plans for the 2012 planting season. **S**

STUDENT ORGANIC FARM CLUB OFFERS HANDS-ON LEARNING

The Iowa State University Student Organic Farm is a campus club involving students, faculty and the Ames community. The club, started in 1996, manages six acres of produce at the Horticulture Research Station. Students do not receive credit for their involvement, but gain experience in organic production and operating a Community Supported Agriculture group. The club's produce is available to shareholders and excess produce is either sold at a farmers' market or donated to shelters and food banks in Ames. Members also work to increase community awareness, support local food systems and encourage multidisciplinary cooperation.

STORIESRecipes

Boerewors South African Sausage

From the kitchen of: **Malcolm Robertson**

Roasted Corn Salsa

From the kitchen of: **Jesse Deardorff**

Great Aunt Dorothy's Scalloped Pineapple

From the kitchen of: **Chad Krull**

Grandma Janet Paulsen's Butterscotch Squares

From the kitchen of: **Tom Paulsen**

Joe's Homemade Pizza

From the kitchen of: **Joe Jacobs**

► Find this recipe and many more online at www.ag.iastate.edu/stories



TEAMING UP

TO SUPPORT LOCAL FOOD PRODUCTION

By Laura Miller

Like a stool relying on environmental, economic and community legs for support, a new program to help Iowans feed themselves as well as the rest of the world has a three-point approach: What do producers need to know? What does the research tell us? Does it all make economic sense?

Answers will come from new hires funded by the College of Agriculture and Life Sciences, Iowa State University Extension and the Leopold Center for Sustainable Agriculture: Joe Hannan in the field, researcher Ajay Nair and applied economist Craig Chase.

Together they lead a team to develop local food production, increase opportunities for new farmers and help existing producers diversify.

Joe Hannan: Man of many crops

Hannan is extension horticulture field specialist for central and western Iowa, a position added November 2010. He works directly with commercial growers of fruit and vegetable crops to diagnose problems and offer consultation.

During the past season he has seen a large influx of new growers setting up operations, many of whom are starting Community Supported Agriculture (CSA) enterprises. He worked with five strawberry growers across the state to fine tune their fertility program using foliar sampling. He's also looking at the effectiveness of biodegradable plastic mulches to control weeds in tomato crops.

So far, he's had no shortage of clients—or questions.

"I might touch on 30 different crops in one day, but you can't know everything. We use a team approach to answer questions and provide service," he says.

His first client had a tall order: how to expand from a half-acre plot to a two-acre enterprise. Hannan recalled: "We had a lot to talk about—soil fertility, equipment needed to scale up, post-harvest handling, food safety, labor costs, weed control. Next year he plans to expand again because there's a huge unmet market in the Des Moines area."

Hannan ('05 horticulture, MS '11) worked five years at the Muscatine Island Research Farm where he grew melons,

Joe Hannan (left), Ajay Nair (center) and Craig Chase are recent hires working together to support and develop local food production in Iowa.



sweet corn, tomatoes and berry crops before accepting this position. At the same time he managed the vineyard at the Southeast Research Farm near Crawfordsville.

Ajay Nair: Ready to launch

Nair is a new assistant professor in horticulture with a focus on sustainable vegetable production. His appointment spans extension, research and teaching. He joined the college in July 2011.

Nair has cast a wide net that extends from his home in northern India where mango and guava are grown to Kerala Agricultural University in southern India, home to rice, coffee and tea plantations. Graduate studies took him to the University of Maine to learn about propagation and greenhouse production, then to Michigan State University where he worked on cover crops, transplant production and crops such as tomato, cucumbers, asparagus, onion and celery.

The common lesson? Diversity helps the soil, which improves production.

"It's all about balance, having a variety of crops in the mix, not just one or two," Nair says. "Having a diverse portfolio is exactly what they tell you in financial management and it works in agriculture, too."

He's interested in cover crops to increase soil fertility, also ways to extend the growing season. He has researched row covers to control cucumber beetles and modify the microclimate for enhanced crop growth. Other research explored how rye and hairy vetch cover crops change plant growth, increase beneficial soil microorganisms and improve nutritional quality of fruit.

Nair has been meeting with vegetable growers to identify production challenges to develop his research and extension program. In fact, he planted his first plots only weeks after moving to Ames. He currently is researching mustard cover crops (a biofumigant that can control some pathogens and nematodes) and season extension of an early winter lettuce crop under high tunnels. He also plans to study biochar, a byproduct of renewable fuel production, in horticulture crops.

Craig Chase: Right person, right time

Chase ('80 MS agricultural economics, '94 PhD rural sociology) is not new to Iowa State or sustainable systems, but his 27 years of experience in extension and job as interim program leader at the Leopold Center made him a perfect fit for the partnership. Chase is extension's statewide local food systems specialist and the coordinator of a new Local Food and Farm Program created by the Iowa legislature.

He explains his role like this: "One of the first questions that farmers ask, whether we're talking about tillage, cover crops or any change, 'Will I make money?' My job is to look at the research, look at the production questions and help determine whether a new

practice or system has long-term sustainability from an economic viewpoint."

Farmers who want to "scale up" production for larger markets will need to understand food safety and a "new way to do business." However, Chase is convinced that change already is taking place in development of "food hubs" where any producer can contribute. Examples include a former school in northeast Iowa, which is an aggregation point for the GROWN Locally farmer network, and an old convenience store in Ogden where four growers distribute produce.

"Nobody is suggesting that we're going to change the landscape of Iowa, but we will provide opportunities for people to get into agriculture," he explains. ■

Photo: Bob Elbert



SHOW AND TELL... AND TASTE

By Ed Adcock

RESEARCH AND DEMONSTRATION HOME GARDENS SHOWCASE HORTICULTURAL CROPS

Whether it's sampling new varieties of tomatoes right from the garden or seeing the latest techniques for growing muskmelons, the Research and Demonstration Farms show Iowans they can grow their own food.

Each summer Iowa gardeners get a chance to preview plants to grow the next year at field days at the farms' Home Demonstration Gardens.

"If tomatoes are ready we'll do a taste testing of different cultivars or varieties. We had hot peppers one year and people loved doing a taste test to see which one met their needs," says Cindy Haynes, associate professor of horticulture, who coordinates the project.

One of this year's goals for the field days was to get children more involved in gardening with several flowers and vegetables named after storybook characters. A blight-resistant tomato, a new variety of sweet corn and a seedless cucumber were included for grown-up gardeners.

Home Demonstration Garden field days were held this year at the Armstrong, Northeast, Muscatine Island, Northern and Horticulture Station Research Farms.

The Muscatine Island Research Farm, in the eastern border town of Fruitland, got its start helping melon growers, who raise

muskmelons that bear the name of the area.

Haynes says the farm also contains the state's only All-American Selections (AAS) trial site that grows new varieties of vegetables to see how they perform. If they are judged ready for gardens they are released to suppliers.

Vince Lawson, superintendent of the Muscatine Island farm, says the most interest is focused on projects dealing with sweet corn and vine crops, like cucumbers, squash, pumpkins and melons. The garden spot, which uses irrigation on the area's sandy soils, also has projects involving tomatoes, potatoes, cherry trees and watermelons.

On the other side of the state, the Armstrong farm near Lewis also has a number of projects devoted to food production, many involving a high tunnel, a hoop structure that allows growers to extend the growing season. The farm also is an AAS display garden that showcases the newest winners.


The farm's greenhouse has served as an educational tool for local vegetable producers allowing them to rent space and learn about greenhouse management and plant propagation. Bernie Havlovik, Armstrong farm superintendent, says there also are several outdoor vegetable

trials including using farm compost as fertilizer, companion crops for pest control and growing marginally hardy blackberries with a collapsible trellis.

The Neely-Kinyon farm, affiliated with Armstrong, specializes in alternative agricultural approaches including projects that grow organic vegetables under no-till, mulched, tilled and with cover crops soil treatments as well as an organic grape trial.

"All our horticultural research is scale-neutral," says Kathleen Delate, professor and organic crops specialist in the horticulture and agronomy departments. "Practices used in the experiments—planting, fertilizing, pest management—follow what a commercial grower and a homeowner can do for organic production."

At the Horticulture Station near Ames, superintendent Nick Howell says most of its projects are applied research geared to commercial growers, many who want to fill the demand created by the local food trend. "What you end up with is data that's useful and practical for a grower," he says.

One example is a research project to see how long strawberries can be grown into the fall using a high tunnel. Another produced a dozen crops last summer to determine if high-value crops would justify a tunnel's costs. 





Home Demonstration Garden field days usually draw 500-600 participants annually. The educational events offer tips for home and commercial producers.

Attendees at the annual Horticulture Farm Field Day sample different cultivars and varieties as they consider which should have a place in their own home gardens.

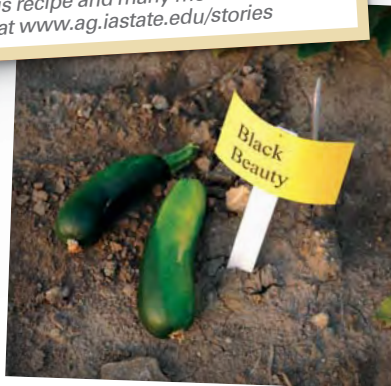


STORIES Recipes

Chocolate Zucchini Bread

From the kitchen of: **Cindy Haynes**

► Find this recipe and many more online at www.ag.iastate.edu/stories



Several flowers and vegetables named after storybook characters were featured at this year's field days to encourage children to get more involved in gardening.

Photos: Bob Elbert

PRODUCING MORE WITH LESS

CONSUMERS BENEFIT FROM FEED EFFICIENCY RESEARCH

By Susan Thompson



John Patience is one of many animal scientists at Iowa State involved in major, USDA-funded research on feed efficiency.

There is a growing shortage of food for people and feed for animals around the world. Increased feed efficiency can benefit consumers, while contributing to food sustainability.

That's why researchers at Iowa State University are involved in three major projects designed to reduce the amount of feed required to produce a pound of meat or a gallon of milk.

John Patience, an Iowa State animal scientist, is directing an international

team of scientists in the swine project.

"Our goal is to improve the efficiency with which the pig converts feed into edible consumer products," Patience says. "Feed is increasingly expensive and food on this planet is becoming increasingly scarce. This research will lead to lower cost of production for the pork industry, and less expensive meat for the consumer."

Diane Spurlock, associate professor of animal science, is on a team of 16 researchers from across the United States and the Netherlands working to improve feed efficiency of dairy cattle. Mike VandeHaar ('84 MS animal science, '88 PhD), now at Michigan State University, leads the dairy project.

Spurlock's genetics research for the project focuses on the ability to select cows that use less feed to produce milk, an approach that has been identified as a U.S. Department of Agriculture's priority area.

Spurlock is measuring feed intake of about 1,000 Holstein cows at the Iowa State University Dairy Farm, which has a system where researchers can electronically track individual cow feed intake. The entire

project will collect data from 8,000 cows.

Iowa State animal science faculty members Stephanie Hansen and Dorian Garrick are on a team of researchers and extension specialists focusing on nutrition and genetics to improve beef cattle feeding efficiency.

Hansen is working on nutrient digestibility and how diet type contributes to cattle production efficiency and greenhouse gas emissions. Garrick is working to determine genetic influences on feed efficiency.

"The goal is to breed cattle that produce the highest quality beef with the least amount of grain," Garrick says. "Less feed reduces the environmental impact, plus frees up farmland for other crops."

Dan Loy, Iowa State animal science professor and interim director of the Iowa Beef Center, leads the extension component, which includes a national educational effort and a demonstration project where producers test the technology developed.

Iowa State is the only university to be involved in all three projects, each funded by a \$5 million grant from the U.S. Department of Agriculture's National Institute of Food and Agriculture. **S**

STORIESRecipes

Beef in Burgundy

From the kitchen of: **Dorian Garrick**

Cheese Log

From the kitchen of: **Diane Spurlock**

Pork Tenderloin w/ Mustard Marinade served w/ Cherry Compote

From the kitchen of: **John Patience**

► Find this recipe and many more online at www.ag.iastate.edu/stories

HOMEGROWN LIFESTYLE

A COURSE AND A WAY OF LIFE

By Willy Klein

Living a homegrown lifestyle on a small parcel of land is second nature for those having grown up learning “how it’s done.” For others, the desire to reconnect to the land comes with a realization that there is much to learn.

Homegrown Lifestyle, an Iowa State University Extension course piloted during spring 2011, was created with those people in mind.

Iowa State’s Jennifer Boussetot, Iowa Master Gardener coordinator, and Andy Larson, small farm sustainability specialist, designed the course for people with visions of producing food for their own use and practicing natural resource stewardship, but not knowing how or where to start.

“Homegrown Lifestyle brings campus and local experts together to offer a complete educational experience. It helps us meet the demand for more information about growing, raising and preserving food for personal consumption,” says Boussetot.

The course combines basic information on food production with practical application and local farm visits. Coursework is presented via webinar the first half of each session and participants further delve into the subject with a local activity during the second half of the evening. Homegrown Lifestyle is purely for personal application; there are no requirements or certification associated with the course. There were 62 people in the first course offered at three locations.

Rich Myers took the course in Dallas County. Growing up he paid little attention to his mother’s gardening techniques. After an absence of 40-plus years, he returned to the home acreage and tried his hand at raising vegetables and tending the landscape. He is more successful in

these endeavors as he applies Homegrown Lifestyle education and networking.

“It was incredible learning from experienced gardeners—they shared simple things that have definitely improved my garden and farmstead this year,” says Myers.

The tremendous amount of information provided each week was more than he could apply immediately, Myers says, so he started planning—including restoring a modest orchard, improving the windbreak and establishing useable landscaping around his new energy efficient home.

Elizabeth Kloss, of Iowa City, had only lived in Iowa six months when she enrolled in Homegrown Lifestyle. This city kid and her family came to Iowa so they could “live off the land” and the ISU Extension course delivered information she was interested in—vegetable and fruit production and preservation, small animals, bees, energy and water use and landscape planning.

The course was an investment in a self-sustainable future for Kristin Blaha, who stays connected to other participants via the course Facebook page.

“Meeting local people with experiences related to the topics and hearing other participants’ ideas and goals added even more value to the course,” she says.

In 2012, the 12-week course will be offered April through June in multiple Iowa locations. 📍

STORIESRecipes

Beet Salad

From the kitchen of: **Jen Boussetot**

Tomato Pie

From the kitchen of: **Andy Larson**

► Find this recipe and many more online at www.ag.iastate.edu/stories

Photo: Bob Elbert



Andy Larson and Jen Boussetot, creators of Homegrown Lifestyle, have personal experience with many of the course topics. Larson raises a few chickens, vegetables, fruits and hops in the yard around his Ames home.

“The exciting part of the research is that the results could impact the health of millions.”



Professor Kevin Schalinske talks with **Mallory Small**, a senior in dietetics, about how dietary nutrients keep metabolic pathways functioning. He teaches several nutrition courses, including one in epigenetics, which suggests that you are what you eat—and so are your children.

YOU ARE WHAT YOU EAT

By Brian Meyer

RESEARCH SHOWS NUTRIENTS MAY HELP WARD OFF DISEASE NOW AND FOR FUTURE GENERATIONS

Nutrition research is discovering the critical role nutrients play in staving off disease.

Kevin Schalinske, a professor of food science and human nutrition, studies how dietary nutrients, and specifically B vitamins, keep metabolic pathways functioning smoothly. When certain B vitamins are lacking, the pathways are disrupted and can lead to development of cancers, cardiovascular disease, diabetes and birth defects.

“The more we understand about how to keep these pathways from being disrupted, the better chance we have to intervene through diet or other approaches,” Schalinske says.

Along these pathways, assemblies of molecules called methyl groups are formed. Many of the body’s essential chemical reactions rely on methyl groups to make compounds active or inactive or to turn genes on or off. “If you don’t have the nutrients available to make enough methyl groups,

you have genes being turned on or off that shouldn’t be. The result can be diseases or further health complications.”

Schalinske’s research has identified many diseases related to an imbalance of nutrients in these important pathways.

In lab research funded by the American Diabetes Association, Schalinske found a specific enzyme played havoc with methyl group metabolism in diabetic mice. It could provide a link between diabetes and related health complications. In other studies, he’s examined how compounds in soyfoods may help prevent breast cancer and how amino acids found in eggs may reduce cardiovascular disease risks.

“The exciting part of the research is that the results could impact the health of millions,” says Schalinske. “Understanding the relationship between nutrition, metabolic processes and diseases lays the foundation for developing intervention strategies,

including future dietary recommendations.”

Schalinske teaches several nutrition courses, including one in epigenetics, which he says is one of the hottest areas of nutrition. Epigenetics suggests that you are what you eat—and your children are what you eat, too.

“Do your dietary and lifestyle choices ingrain themselves in your genes and not only impact your health, but the health of future generations?” he says. “These are questions that will take a lot more work to understand.”

STORIES Recipes

Mexican Chicken

From the kitchen of: **Kevin Schalinske**

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From the intern's desk to the executive suite at the OSI Group, **David McDonald** has a unique perspective on major shifts on the global food industry.



Contributed Photo

ENGAGING LOCAL TASTES TO SATISFY A GLOBAL PALATE

By Melea Reicks Licht

David McDonald started training for his job as president and chief operating officer of the OSI Group more than 25 years ago when he was hired as the company's first intern.

McDonald ('87 animal science) grew up on a family farm in Northeast Iowa and initially planned on veterinary school after graduation from Iowa State. But with the help of career service director Roger Bruene, he landed the internship that would lead McDonald to becoming president of a \$5 billion multi-national food processing company.

He started full time as a project manager fresh out of college and worked his way through the ranks helping OSI expand, especially in Latin America and Asia.

"OSI's heritage includes being the first beef patty supplier to Ray Kroc and McDonald's in 1955," he says. "We've grown internationally with McDonald's and have expanded that global network to meet other customers' needs."

McDonald says OSI's "growth mentality" thrived because of its global relationship with McDonald's, decentralized management and its commitment to food safety and quality standards. The company, headquar-

tered in Aurora, Ill., has 47 processing facilities in 17 countries. It supplies fully cooked or ready-to-cook products—primarily protein—to many of the world's leading food brands.

"No matter where we are—China, India, Poland—we feel it is important to know the local needs and respect traditions and cultural influences," McDonald says. "We establish local management teams and allow them to make as many decisions as possible since they are much closer to the customer."

For example, OSI's product development team in China developed rice-based items and shredded meats preferred by Chinese consumers. Collaboration with the local team resulted in successful new product launches for two global customers in the region.

Throughout his career McDonald says he's seen customers take a more active role in understanding where and how their food is produced.

"Customers have always been focused on taste and quality, but over the last decade, they've asked more questions about how their product was processed, how it was

raised and by whom. They want to make sure it was done in a sustainable manner to be sure people, places and resources aren't exploited in the process," he says.

Doing business in Europe led OSI to incorporate sustainability initiatives and develop organic and natural products before such trends were significant in the United States. OSI also is actively involved in making sure its operations and suppliers are meeting or exceeding animal welfare practice standards.

According to McDonald, OSI's versatile supply chain approach allows the company to adapt to the many consumer demands worldwide. "Creating products for the highly informed and involved consumer is the future for OSI," says McDonald. ■

STORIES Recipes

Friday Night Football Chili

From the kitchen of: **David McDonald**

► Find this recipe and many more online at www.ag.iastate.edu/stories

LUNCHROOM HEROES

By Melea Reicks Licht

BRINGING LOCAL PRODUCE TO SCHOOL



Contributed Photo

Vanessa Zajfen works to secure healthy and local food for all communities in the San Diego Unified School District, including many low-income and underserved areas.

Students in the San Diego Unified School District are trading cards of a different variety these days. One “Farmer Bill Brammer” card could equal a “Robin and Lucila from Suzie’s Farm.”

Complete with crops grown, farm size and brand of tractor driven, farmer trading cards are one of the many ways Vanessa Zajfen, the school’s farm to school specialist, connects kids to those who grow their food.

Zajfen, (’05 MS sustainable agriculture) coordinates local food purchasing and programming for the second largest school district in California.

“Vanessa is knowledgeable, engaging and willing to do whatever it takes to get the freshest produce to our children. She has inspired farmers to prepare and deliver fresh organic produce to our over 200 schools,” says Gary Petill, director of food services. “Vanessa also has made agreements with many farmers to plant and harvest products just for our school district.”

Prior to this position Zajfen worked at the Urban and Environmental Policy Institute at Occidental College where she contributed to the nation’s first locally supplied Women Infant and Children (WIC) food program. She has also owned and operated her own produce company sourcing and selling locally grown foods.

After completing her bachelor’s at the University of California at Santa Cruz, Zajfen, an Orange County native, was drawn to Iowa State for the interdisciplinary masters program in sustainable agriculture. She also jumped at the chance to live “in the middle of America.”

“My favorite course was an immersion course in Iowa agricultural systems,” she says. “One day after I arrived in Iowa I piled into a van with other sustainable ag students and for 24 hours a day for two weeks we traveled the state visiting big and small farms, conventional and organic, processing plants, dairy farms, beef cattle farms, pig farms. We could compare and contrast those systems easily.”

She draws upon her education and practical experience when she visits with farmers about how they can meet the district’s needs. Zajfen helps place local foods on menus according to seasonal availability and coordinates how both farmers and the district can meet U.S. Department of Agriculture regulations.

“Our biggest challenges are finding enough supply to meet our needs and training staff. Not only do we need to find enough raw broccoli to feed all our students, but we need to train our staff how to prepare it rather than using processed frozen,” Zajfen says.

She says price is always on her mind as well. “We have \$1.03 to create a school meal. When a local apple makes up 25 cents, things add up really quickly.”

For Zajfen it is rewarding to see the program grow into a framework through which the district’s entire food system is moving to healthier meals. “Farm to school is a radical shift and a lot of people have been inspired,” she says. **S**



Zajfen creates farmer trading cards and other communication pieces to reach out to parents and staff as well as students about the value of eating local foods.

HOW LOCAL IS LOCAL?

For the San Diego Unified School District’s Farm to School Program Vanessa Zajfen categorizes farms into tiers: “San Diego Local” is within 25 miles of the county border; “Local” is within 150 miles of the school’s distribution center; and “Regional” is over 150 but within 250 miles of the distribution center.

Jay Wenth demonstrates specialty beef cuts during a workshop of the Iowa Meat Processors Association.



Contributed Photo

TACKLING MEATY ISSUES

ALUM PROVIDES PROCESSORS THE TOOLS TO SUCCEED By Darcy Maulsby

In the meat processing business, food safety remains a priority issue for companies of all sizes, including small, independent processors who have been supplying local foods long before the concept captured the attention of culinary professionals and consumers.

As executive director of the American Association of Meat Processors (AAMP), Jay Wenth provides tools to help these processors succeed.

"We need a science-based food safety system," says Wenth. "At AAMP, my job is not only to help processors stay current on regulations, but explain how they can implement strategies to be in compliance with these regulations."

Wenth ('03 PhD meat science) has developed a variety of online resources to help members supply safe, quality meats

to consumers. Since starting his career at AAMP in 2003, he has created tools including model Hazard Analysis and Critical Control Points (HACCP) food safety plans and nutrition labeling information.

Wenth says his studies at Iowa State emphasized the importance of providing these practical, real-world solutions, which are invaluable to the association's 1,315 members, including meat business operators, wholesalers, processors and home food service operators.


One of Wenth's most useful experiences at Iowa State was attending the popular Sausage and Processed Meat Short Course, which is taught by leading professionals from around the globe. Wenth credits Joe Cordray, professor of animal science, for helping him learn about a variety of sectors within the meat business and connect with leaders in the industry.

"Every day at AAMP is different, and I need to have a network of professionals

throughout the country that I can call to provide assistance to small meat processors who may not have Ph.D.s on staff," says Wenth.

The Iowa Meat Processors Association (IMPA) honored Wenth during the group's 2011 convention for outstanding service to the meat industry.

"There is no person in the country more dedicated to small meat processors than Jay Wenth," says Cordray, who also is an IMPA member. "Not only does he have a working knowledge of the industry, but he goes out of his way to help small meat processors develop sustainable businesses."

Wenth says he enjoys helping others discover the many opportunities that exist in the meat processing industry today and appreciates the solid base his Iowa State University training provided. 

Contributed Photo



Joe Cordray (left) presents **Jay Wenth** an award for his contributions to the meat industry on behalf of the Iowa Meat Processors Association.

ONLINE EXTRAS: www.ag.iastate.edu/stories

Visit the American Association of Meat Processors online for resources for small, independent meat processors

SERVING UP LOCAL FOODS USING OLD WORLD METHODS

By Melea Reicks Licht



Photo: Bob Elbert

Rettig took a few moments during a busy lunch hour to chat with patrons and happened to find fellow alum, Josh Hansen ('97 ag studies) and his wife Renee, a College of Design grad.

"It's just a café." That's what Kevin Rettig and his partners say about the haven of eclectic cuisine they created just north of Iowa State University campus.

But, he is quick to admit they knew they were on to something special when they opened The Café in 2003.

"This type of restaurant was the first of its kind in the Ames area," he says. "They say the coasts are five years ahead of us, but our ideas were right in line with what I was seeing on the West coast at the time."

The restaurant was designed to have a neighborhood bistro feel with a menu grounded in local foods says Rettig ('94 food science and technology), who was executive chef at the time and has since become general manager.

The Café consists of a bakery and coffee-house, restaurant, bar and catering company. Cooking methods are Old World like making sausage in-house, smoking and curing meats, grilling over a wood fire and roasting in a stone oven. They bake artisanal breads and every pastry and dessert is made from scratch.

Rettig considers it a "chameleon."

"We want people to see us differently. We've always wanted to be a neighborhood place for ice cream with the kids, a four-course meal in the evenings, or just a quick breakfast," he says. "Some people see us as a fancy place, but our intention has simply been to serve good food and take good care of people."

Developing a taste for the restaurant business

Rettig got his start in the restaurant business as a dishwasher at the Ames favorite, Aunt Maude's. There he met the two men who would become his professional mentors and business partners at The Café: Bob Cummings and Pat Breen.

As he attended Iowa State, Rettig quickly worked his way to tending bar, then to the kitchen where he cooked alongside the head chef at Aunt Maude's for three years.

"My ability to cook and the knowledge to do so was gained by trial and error, lots of interest and great teachers and critics," Rettig says. "I was afforded the luxury of being able to bring in an idea and to work with it until success, or sometimes failure."

He spent time as head chef and general manager at O'Malley and McGees restaurant in Ames, and as a sous-chef in two restaurants in Portland, Oregon, for several years before he reconnected with Cummings and Breen to create The Café.

Flavor is always in season

The Café's seasonal menu runs on a six-week cycle.

"Menu ideas come from everyone involved. We have great arguments about why something should or should not be on the menu," Rettig says with a smile. "We find ideas from websites, trade magazines, newspapers, all over."

One thing they all agree on is the use of local produce.

Photo: Bob Elbert

STORIES Recipes

Lamb Ragu and Pappardelle Pasta

From the kitchen of: **Kevin Rettig**

► Find this recipe and many more online at www.ag.iastate.edu/stories



Kevin Rettig still dons a chef's coat from time to time at The Café, but since launching the restaurant he's moved from executive chef to general manager.

"Using local foods has a cause-and-effect relationship on the menu. It forces us to change with availability so that can be challenging. Plans can be ruined based on crop performance. But, the quality is better. An heirloom tomato needs to be picked and served when ripe, as with any vegetable," says Rettig.

The Café orders food from farmers daily during the growing season and

often produce is delivered the same day it is picked. They work with about 25 different area growers. During the winter months, Rettig and his colleagues meet with farmers to plan for the next season.

"They come armed with seed catalogs and we have fun picking out new and unusual possibilities that they or we may like to try," he says.

Rettig enjoys the focus on fresh, local produce but values food producers at every scale. "Commodity beef and other products have a place here. Our hamburger is local, but our steaks aren't from a single producer," he says.

"Plus, we're in a state you can't grow certain ingredients year-round. We can't get local olive oil and I need to supplement using canned tomatoes in the off season for example."

The Café's approach to food has proven successful, says Rettig, "we couldn't have drawn a more perfect growth ladder."

Today staff includes an executive chef, two sous chefs and others totaling 95 employees—of which half are university students. The Café serves an average of 800 customers per day and it is common to find a wait for a table any day of the week during peak hours. 🍴

Photo: Bob Elbert



The Café makes all pastries and desserts in-house, but you won't find Rettig's favorite in the case—he prefers carrot cake crumbs left behind in the pan.

NUNNIKHOVEN RETURNS TO FAMILY FARM

Chandler Nunnikhoven was featured on the front page of the Des Moines Register in July. The alumnus purchased his grandparents' farmstead, tends cattle and intends to renovate one of the barns on the property. Nunnikhoven earned a bachelor's degree in horticulture with a minor in agronomy in 2010. His day job is managing a staff of nine workers for the city of Pella. For a link to the complete article and a photo essay of his farm visit www.ag.iastate.edu/stories.

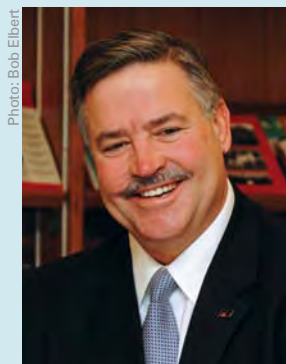


Photo: Bob Elbert

LANG CHOSEN TO LEAD BOARD OF REGENTS, STATE OF IOWA

Craig Lang, president of the Iowa Farm Bureau, was unanimously approved in July as the new president of the body that governs Iowa's public universities. Lang replaced David Miles, who was asked to resign as president by Gov. Terry Branstad and returned to the position of board member. Lang earned a bachelor's degree in dairy science in 1973. He has been Iowa Farm Bureau president since 2001.

IN MEMORIAM

Norma "Duffy" Lyon, better known as the "Butter Cow Lady," died June 26. She was 81. Lyon sculpted the Iowa State Fair Butter Cow from 1960 until her retirement in 2004. She earned a bachelor's degree in animal science in 1951. She owned and operated Lyon Jerseys Dairy Farm near Toledo with her husband, Joe. A life-size bronze cow honoring Lyon was installed when the new ISU Dairy Farm was dedicated.

Charles Manatt, former U.S. Ambassador to the Dominican Republic, died July 22. He was 75. Manatt earned a bachelor's degree in rural sociology from ISU in 1958. He founded First Los Angeles Bank. He was elected chair of the Democratic National Committee in 1981. In 1992, he was co-chair of the Clinton-Gore presidential campaign, and in 1999 President Clinton appointed Manatt as the U.S. Ambassador to the Dominican Republic. He received the Distinguished Alumni Award from the Iowa State University Alumni Association and ISU Foundation.

Marvin Walter of Ames died June 1. He was 70. Walter earned bachelor's and master's degrees in animal science in 1962 and 1964. Walter worked for the American Meat Institute, then as a commodity broker at the Chicago Mercantile Exchange. Over the years, he operated Carriage House Meat, Provision Co. and several affiliated businesses. Walter was involved in many Iowa State activities, serving on the Board of Governors and receiving the Order of the Knoll award for Distinguished Service. He also received the Floyd Andre award for Distinguished Service to Agriculture from the college.

THE BELLS TOLL: ALUMNA OFFERS 9/11 TRIBUTE ON CARILLON

On September 11 from the carillon studio in the campanile, alumna **Amy Brandau** played "America the Beautiful" and then rang the bells 10 times, one for each year since the attacks. Brandau earned a bachelor's degree in agricultural business in 2000 and an MBA in business administration in 2008. She is an academic adviser in the ISU College of Engineering. Brandau studied the carillon with ISU carillonneur Tin-shi Tam as both an undergraduate and graduate student. Brandau offers a look inside the campanile in a STORIES online extra video at: www.ag.iastate.edu/stories.

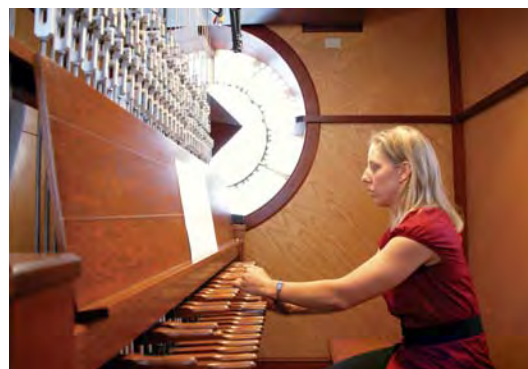


Photo: Barbara McBreen



Photo: Jim Heemstra

NEWLIN RECEIVES FIRST IOWA CORN LIFETIME ACHIEVEMENT AWARD

Alumnus **Owen Newlin**, retired senior vice president of Pioneer Hi-Bred International, received the first Iowa Corn Lifetime Achievement award in August at the Iowa Corn Growers Association annual meeting. Newlin earned a bachelor's degree in agronomy and a master's degree in crop production. Read more about Newlin in a 2010 article from STORIES online at www.ag.iastate.edu/stories.

Gretta Irwin, of the Iowa Turkey Federation, and **Mike Persia**, poultry nutritionist, share an Iowa State Fair favorite. Marketing turkey at the fair is one way they work together to support the federation.

Photo: Bob Elbert

TALKING TURKEY FOR MORE THAN 60 YEARS:

IOWA TURKEY FEDERATION
AND IOWA STATE UNIVERSITY

By Ed Adcock

This year Iowa turkey farmers are on track to raise a record 10.5 million birds. Overall, Iowa is ninth in turkey production and fifth in processing nationwide.

Iowa State University has been a partner with the industry from the beginning, according to Gretta Irwin, Iowa Turkey Federation executive director and home economist.

In 1941, W.R. Whitfield, an Iowa State poultry extension faculty member, wrote an article titled "WHY ORGANIZE? Growers Benefit by Group Action" in a publication of the Iowa Turkey Growers' Association, the precursor of the Iowa Turkey Federation which was founded in 1948.

Several Iowa State faculty members currently do turkey research and actively interact with the federation and its members.

Darrell Trampel, Iowa State University Extension poultry veterinarian, provides educational presentations, diagnostic services, influenza surveillance and applied research for turkey farmers throughout the Midwest.

Mike Persia, assistant professor in animal science, works with the feed industry and farmers on nutrition related questions. Persia is the official Iowa State University liaison to the Iowa Turkey Federation.

Persia joined the faculty two years ago specializing in poultry nutrition. He says the close relationship between Iowa State, the federation and its members helped seal his decision to accept the position. Since starting his work, Persia has been impressed by the talent and dedication displayed by turkey farmers.

"Having people here to talk to and ask how they are doing things keeps my research program up-to-date. The industry is moving very quickly, responding to input costs and adapting new technology to deal with day-to-day demands," he says.

Irwin says Persia's nutrition work is helping farmers. "Feed is the number one cost in raising turkeys, so managing feed costs is essential for profitability. Feed also plays a major role in keeping the turkeys healthy. You have to have safe and

nutritious feed to raise healthy turkeys."

The relationship built during Iowa State's long-time involvement goes beyond research and extension.

"We bring a lot of students to turkey farms, exposing them to how farmers care for their turkeys," Persia says. "I think we've worked very effectively together to promote an understanding of poultry production in our students."

Irwin agrees attracting future members of the turkey industry is a benefit of collaborating. In this way the long-lived partnership between Iowa State University and the Iowa Turkey Federation is sustaining its future. 📌

STORIES **Recipes**

Iowa Grilled Turkey Tenderloin

From the kitchen of: **Iowa Turkey Federation**

Southwest Turkey Salad

From the kitchen of: **Iowa Turkey Federation**

► Find this recipe and many more online at www.ag.iastate.edu/stories

SUCCESS BREEDS SUCCESS

LEOPOLD CENTER AND ISU EXTENSION HELP INCREASE DEMAND AND CAPACITY FOR LOCAL FOODS By Melea Reicks Licht

It's like a delicious cycle.

Local growers increase production of fruits and vegetables; consumers appreciate the improved availability and ask for more; growers expand to meet increased demand.

The Northeast Iowa Food and Fitness Initiative is driving such a cycle in their region by bringing together growers, community members and Iowa State Extension staff who work together to increase access to locally produced foods.

The coalition from northeast Iowa was selected as the first pilot group by the Leopold Center for Sustainable Agriculture Regional Food System Working Group in 2006.

The Working Group is a network of 16 autonomous groups covering the state of Iowa that support local food system efforts.

"Each group determines what is important for their region, and the Center assists them with strategic planning and organization," says Craig Chase, interim program leader of the Leopold Center's Marketing and Food Systems Initiative.

The creation of Northeast Iowa Food and Fitness Initiative's plan brought their group to the national stage and caught the attention of the W.K. Kellogg Foundation, which designated Northeast Iowa as one of nine communities to become models of change. The foundation provided funding to create a multi-year plan for Allamakee, Chickasaw, Clayton, Fayette, Howard and Winneshiek counties to grow their local food infrastructure.

The initiative addresses policies, practices and systems that support healthy communities and provide affordable food. It works with regulatory agencies to minimize barriers to local food purchases

from both sides, and it leverages funding and expertise to serve its mission.

Bob Raymond operates a small market garden and farm stand near Lansing. The initiative provided training to prepare farmers for on-farm food safety audits. Raymond is one of 13 producers who passed a U.S. Department of Agriculture Good Agricultural Practices (GAP) audit.

"They offered the unique opportunity to get a GAP audit performed at no cost, with just a small cost for two days of intensive food safety training. It was wonderful. About 13 of us went through and passed," Raymond says. "If we want to be involved in selling food to the public we're going to have to develop our GAPs. Coaching and training are part of that—I'm encouraged and confident we can get through the obstacles to get through the GAP if we combine ISU Extension and the Initiative."

Success breeds success.

Efforts of the Initiative have increased the growing season in the region as growers set up more greenhouse space in response to increased consumer demand. The increased availability of off-season produce in the area has led schools, care centers and private consumers to realize they can purchase local produce for nearly nine months out of the year.

"By tracking food sales from just four to five producers, our region saw an increase of more than \$1.2 million in increased local food sales last year, bringing local food sales to more than \$1.7 million last year," says Brenda Ranum, regional extension education director.

The cycle continues. ■



Photos: Amber Blinger

Teresa Wiemerslage, ISU Extension program coordinator ('96 MS plant pathology), visits with **Brian Nordschow** (left) of Prairieview Vineyard and **Bob Raymond** of Village Creek Farm at a recent food safety workshop.

STORIES Recipes

Autumn Chowder

From the kitchen of: **Brenda Ranum**

Cheesy Pasta w/ Summer Veggies

From the kitchen of: **Teresa Wiemerslage**

Leek and Potato Soup

From the kitchen of: **Bob Raymond**

► Find this recipe and many more online at www.ag.iastate.edu/stories

ONLINE EXTRAS: www.ag.iastate.edu/stories

View a map of all the Regional Food System Working Groups in Iowa and visit the Northeast Iowa Food and Fitness Initiative online.

Culinary science student **Phil Canada** interned at the Soyfoods Council developing recipes such as this soy pesto served on baguettes.

INTEREST IN CULINARY SCIENCE HEATS UP

By Barbara McBreen

Cooking is chemistry. Every time you heat, stir, cool or mix ingredients you are experimenting. Studying and understanding the chemical interactions behind the recipe is what students majoring in culinary science are doing.

"The curriculum is based strongly in food sciences and students develop basic culinary skills and knowledge," says Erica Beirman, Iowa State University alumna and culinary science coordinator. "Our graduates work in the test kitchens and research labs where food products are developed."

That's what attracted Phil Canada who is a junior in culinary science. One of the requirements for students is to participate in at least two internships, one in the food science industry and one with a culinary science focus.

Rich and Nancy Degner contributed scholarship funds to help culinary science students pursue internships in the food, restaurant or culinary industry. Rich ('72 agricultural education, '77 MS) is executive director of the Iowa Pork Producers Association and Nancy ('72 food science) is executive director of the Iowa Beef Industry Council.

Canada is one of the 2011 Degner scholarship recipients. Last summer, he interned at the Soyfoods Council developing recipes. The goal was to create recipes to be used in dining services that serve a large number of meals, like a cafeteria or dining hall.

One of the ingredients was a shelled edamame, a green soybean that is a complete protein because it contains the essential amino acids. Canada says they developed a pesto recipe that included edamame, spinach, walnuts, basil, Parmesan cheese and olive oil. He and Angelica Gutierrez, a senior in culinary science and food science, prepared and served it at a college event last fall. The soy pesto was a hit.

"It's a classic pesto recipe. The first bite gives you a pesto flavor, then you get a mild smoky, spicy flavor at the end from the Tabasco sauce we added," Canada says.

The culinary science major was first available in 2008 to students in both the College of Agriculture and Life Sciences and the College of Human Sciences. The first culinary science students graduated last May scoring jobs with a Pampered Chef test kitchen, the Iowa Egg Council, August Home Publishing and Hy-Vee grocery, among others.

Cassie Miller was a College of Human Sciences graduate in that first graduating

class and also received the Degner scholarship. One of Miller's internships took her to Denver where she worked in recipe development, education and food production at the Beef Culinary Center at the National Cattlemen's Beef Association. Miller currently works as a demonstration chef with Hy-Vee promoting products and educating the public on food preparation techniques.

Beirman says faculty and staff are careful about letting interested students know the difference between culinary arts and culinary science.

"We want students to be sure this is the right major for them," Beirman says. "This is the major for students who develop the products for the restaurant, not the students who want to own the restaurant."

Interest in the degree is heating up. The number of prospective students interested in the major has tripled since it was first introduced three years ago. **S**



Alumni **Rich and Nancy Degner** created a scholarship for students majoring in culinary science, a major shared between the Colleges of Agriculture and Life Sciences and Human Sciences. The Degners are shown with two recipients, **Phil Canada** and **Angelica Gutierrez**.

STORIES Recipes

French Onion Beef Sandwich

From the kitchen of: **Nancy Degner**

Peanut Butter Balls

From the kitchen of: **Erica Beirman**

Pork Wellington

From the kitchen of: **Phil Canada**

Soy Pesto

From the kitchen of: **Phil Canada and Angelica Gutierrez**



Alum **Dwight Hughes** ('70 horticulture and landscape architecture), second from right, presented commemorative green ties to Iowa State University administrators involved in the ribbon cutting—**Dean Wendy Wintersteen**; **Jeff Iles**, horticulture chair; and **President Gregory Geoffrey** (right).

THE FUTURE IS CLEAR

By Melea Reicks Licht

NEW GREENHOUSES PROVIDE FIRST-RATE EXPERIENCES FOR STUDENTS AND RESEARCHERS

THANK YOU!

The College of Agriculture and Life Sciences raised over \$130 million through Campaign Iowa State—\$30 million of which will support student scholarships. The college tripled its number of endowed faculty positions, and gifts have driven major construction projects in Curtiss Hall, Agriculture and Biosystems Engineering and Horticulture. The impact of gifts made during this campaign will be felt for generations to come—thank you for your continued support!



New horticulture greenhouses at Iowa State University built through public, private partnerships provide a first-class venue for education and research.

The 12,000 square-foot, state-of-the-art facility, dedicated in September, replaces 98-year-old greenhouses that were demolished in 2010. The greenhouses extend along the south side of Horticulture Hall, home of the Department of Horticulture.

The complex is partitioned into sections dedicated to research, teaching and student club activities. Each area is equipped with computerized control system monitors that regulate environmental parameters such as temperature, humidity and light intensity providing optimal conditions for plant growth.

During the next semester hundreds of students from several departments in

the college will study and learn in the new greenhouse facility.

"We are very proud of this facility and excited about the opportunities it will provide for our students as they prepare for their careers," says Jeff Iles ('93 PhD horticulture), professor and chair of the department of horticulture.

Funds for the \$4 million project included approximately \$1 million in private gifts. Iowa State and the College of Agriculture and Life Sciences provided the remaining funds. **S**

ONLINE EXTRAS: www.ag.iastate.edu/stories

For photos of the new greenhouses, including a custom Sticks mural installed as public art, visit www.ag.iastate.edu/stories.

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IN AGRICULTURE AND LIFE SCIENCES

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Download RECIPE FOR SUCCESS

STORIES Recipes

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From the kitchen of:
the College of Agriculture and Life Sciences

Go online to find all the recipes mentioned in this issue in a special edition cookbook. Download the complete booklet or view each recipe on your computer or mobile device. Share comments and photos. Eat! Enjoy!



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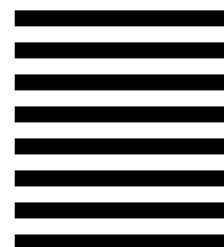
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Jennie enjoyed food research and development **from an early age.**



She just needed a little help to turn it into a career.

Jennie Hansen knew food science was the major for her. She just wasn't sure where it would take her. That changed when Jennie landed an internship at the ISU Wine Quality Lab. After continuing her studies at cellars in New York and California she returned to the Wine Quality Lab full time. Now Jennie's helping Iowa wineries improve their product and in turn grow local economies. That's worth toasting.

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